

PERFORMANCE AUDIT
OF THE
BUREAU OF EPIDEMIOLOGY
DEPARTMENT OF COMMUNITY HEALTH

September 1999

EXECUTIVE DIGEST

BUREAU OF EPIDEMIOLOGY

INTRODUCTION

This report, issued in September 1999, contains the results of our performance audit* of the Bureau of Epidemiology*, Department of Community Health (DCH).

AUDIT PURPOSE

This performance audit was conducted as part of the constitutional responsibility of the Office of the Auditor General. Performance audits are conducted on a priority basis related to the potential for improving effectiveness* and efficiency*.

BACKGROUND

The mission* of the Bureau is to provide information necessary for developing interventions, including policies and practices, that will improve the public's health through surveillance and analytic services.

The Bureau consists of three divisions: Communicable Disease Epidemiology, Epidemiology Services, and Environmental Epidemiology. Each of the divisions has specific goals and objectives that contribute to the overall Bureau mission.

The Bureau was appropriated \$7.1 million for fiscal year 1998-99 and had 35 employees as of January 21, 1999.

* See glossary at end of report for definition.

AUDIT OBJECTIVES,
CONCLUSIONS, AND
NOTEWORTHY
ACCOMPLISHMENTS

Audit Objective: To assess the Bureau's effectiveness in collecting epidemiological data and investigating potential health threats.

Conclusion: We concluded that the Bureau was generally effective in collecting epidemiological data and investigating potential health threats. However, we noted reportable conditions* involving tuberculosis billing reimbursements and employee evaluations (Findings 1 and 2).

Noteworthy Accomplishments: In spring 1997, the Bureau was the first to identify the cause of the hepatitis A epidemic among Marshall area schoolchildren. The Bureau's identification prompted the nationwide recall of frozen strawberries, thereby reducing the risk of outbreaks nationwide. The strawberries were grown in Mexico, processed and frozen in a California plant, and distributed through the U.S. Department of Agriculture for school lunch programs and through distributors for commercial use.

In addition, in summer 1997, the Bureau implicated alfalfa sprouts as the cause of a multistate outbreak of *E. coli* O157:H7* .

Audit Objective: To assess the Bureau's effectiveness in providing health-related information for developing interventions that will either protect or improve public health.

* See glossary at end of report for definition.

Conclusion: We concluded that the Bureau was generally effective in providing health-related information for developing interventions that will either protect or improve public health. However, we noted a reportable condition involving timely reporting (Finding 3).

Noteworthy Accomplishments: In 1998, Michigan was recognized by the Centers for Disease Control and Prevention as making significant progress in implementing the U.S. Public Health Service guidelines as a result of the activities and research performed by the Bureau. The Public Health Service guidelines recommend providing human immunodeficiency virus (HIV) counseling and voluntary testing for all pregnant women and using an antiretroviral drug* among infected women and their infants. A study performed by the Bureau indicated that an increased number of HIV-infected pregnant women were being treated with zidovudine* prophylaxis*. This treatment resulted in a decrease in the number of exposed children becoming HIV infected, thereby demonstrating the success of perinatal* HIV prevention efforts.

AUDIT SCOPE AND
METHODOLOGY

Our audit scope was to examine the program and other records of the Bureau of Epidemiology. Our audit was conducted in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States and, accordingly, included such tests of the records and such other auditing procedures as we considered necessary in the circumstances.

We examined the Bureau's records and activities for the period October 1, 1996 through January 31, 1999. Our

* See glossary at end of report for definition.

audit procedures included reviewing the Bureau's mission statement and applicable statutes, policies, and procedures. Also, we interviewed DCH staff and Centers for Disease Control and Prevention personnel, and we surveyed local health department professionals, physicians, and medical laboratory professionals. In addition, we reviewed processes related to the receipt and processing of health-related data and information.

AGENCY RESPONSES
AND PRIOR AUDIT
FOLLOW-UP

Our audit report includes 3 findings and recommendations. The agency preliminary response indicated that DCH and the Bureau agree with all 3 findings and recommendations.

Two recommendations from the prior audit were within the scope of the current audit. We rewrote both recommendations for inclusion in this report.

Mr. James K. Haveman Jr., Director
Department of Community Health
Lewis Cass Building
Lansing, Michigan

Dear Mr. Haveman:

This is our report on the performance audit of the Bureau of Epidemiology, Department of Community Health.

This report contains our executive digest; description of agency; audit objectives, scope, and methodology and agency responses and prior audit follow-up; comments, findings, recommendations, and agency preliminary responses; description of survey and summary of survey responses, presented as supplemental information; and a glossary of acronyms and terms.

Our comments, findings, and recommendations are organized by audit objective. The agency preliminary responses were taken from the agency's responses subsequent to our audit fieldwork. The *Michigan Compiled Laws* and administrative procedures require that the audited agency develop a formal response within 60 days after release of the audit report.

We appreciate the courtesy and cooperation extended to us during this audit.

Sincerely,

Thomas H. McTavish, C.P.A.
Auditor General

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Description of Agency

The Bureau of Epidemiology was previously part of the Department of Public Health. Executive Order No. 1996-1, effective April 1, 1996, created the Department of Community Health (DCH) by combining a portion of the Department of Public Health, the Department of Mental Health, the Medical Assistance Program (commonly known as Medicaid), and the Center for Substance Abuse Services. As a result of reorganization, the Bureau was established in its current form in January 1998.

The mission of the Bureau is to provide information necessary for developing interventions, including policies and practices, that will improve the public's health through surveillance and analytic services.

The Bureau consists of three divisions: Communicable Disease Epidemiology, Epidemiology Services, and Environmental Epidemiology. Each of the divisions has specific goals and objectives that contribute to the overall Bureau mission.

The Communicable Disease Epidemiology Division uses epidemiologic science to assess and control communicable disease in Michigan, helps build epidemiologic capacity at Michigan local health departments, and provides epidemiologic leadership and consultation. In addition, the Division compiles the human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) data for the State and also provides the data to the federal Centers for Disease Control and Prevention to be used for comparisons across the country.

The Epidemiology Services Division provides information to public health professionals, researchers and other DCH programs that is necessary to develop interventions to improve health and prevent disease and premature death related to causes other than communicable diseases.

The Environmental Epidemiology Division serves as the focal point for the analysis and prevention of adverse health effects from toxic and hazardous substances in the environment.

The Bureau was appropriated \$7.1 million for fiscal year 1998-99 and had 35 employees as of January 21, 1999.

Audit Objectives, Scope, and Methodology and Agency Responses and Prior Audit Follow-Up

Audit Objectives

Our performance audit of the Bureau of Epidemiology, Department of Community Health (DCH), had the following objectives:

1. To assess the Bureau's effectiveness in collecting epidemiological data and investigating potential health threats.
2. To assess the Bureau's effectiveness in providing health-related information for developing interventions that will either protect or improve public health.

Audit Scope

Our audit scope was to examine the program and other records of the Bureau of Epidemiology. Our audit was conducted in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States and, accordingly, included such tests of the records and such other auditing procedures as we considered necessary in the circumstances.

Audit Methodology

We examined the Bureau's records and activities for the period October 1, 1996 through January 31, 1999. Our audit procedures were conducted from July 1998 through January 1999 and included reviewing the Bureau's mission statement; applicable statutes, policies, and procedures; Bureau activity reports; and revenues and expenditures. We interviewed DCH staff and Centers for Disease Control and Prevention (CDC) personnel. We surveyed local health department professionals, physicians, and medical laboratory professionals. We reviewed annual reports and a recent graduate study that included the results of the completeness of individual health record information and data reported to the Bureau. We conducted research and obtained applicable health-related documentation and reports from other states regarding epidemiology. In addition, we conducted procedures specific to each objective, as appropriate.

To accomplish our first objective, we obtained an understanding of the Bureau's internal control structure* for collecting epidemiological data and investigating potential health threats. We reviewed the processes related to the receipt and recording of health-related data and information. We contacted local health department professionals, physicians, and CDC personnel to determine the usefulness and timeliness of the data and information provided by the Bureau. We randomly selected 420 local health department professionals, physicians, and individuals in other health-related occupations to be surveyed.

To accomplish our second objective, we obtained an understanding of the Bureau's interaction and communication with local health department professionals, CDC, and other states. We also identified and consulted with the stakeholders of the information provided by the Bureau. We obtained recent articles published by Bureau employees. We consulted with DCH staff to determine the impact that the health-related information, provided by the Bureau, has on current and future activities.

Agency Responses and Prior Audit Follow-Up

Our audit report includes 3 findings and recommendations. The agency preliminary response indicated that DCH and the Bureau agree with all 3 findings and recommendations.

The agency preliminary response which follows each recommendation in our report was taken from the agency's written comments and oral discussion subsequent to our audit fieldwork. Section 18.1462 of the *Michigan Compiled Laws* and Department of Management and Budget Administrative Guide procedure 1280.02 require DCH to develop a formal response to our audit findings and recommendations within 60 days after release of the audit report.

Two recommendations from the prior audit report were within the scope of the current audit. We rewrote both recommendations for inclusion in this report.

* See glossary at end of report for definition.

COMMENTS, FINDINGS, RECOMMENDATIONS, AND AGENCY PRELIMINARY RESPONSES

EFFECTIVENESS IN COLLECTING EPIDEMIOLOGICAL DATA AND INVESTIGATING POTENTIAL HEALTH THREATS

COMMENT

Audit Objective: To assess the Bureau of Epidemiology's effectiveness in collecting epidemiological data and investigating potential health threats.

Conclusion: We concluded that the Bureau was generally effective in collecting epidemiological data and investigating potential health threats. However, we noted reportable conditions involving tuberculosis billing reimbursements and employee evaluations.

Noteworthy Accomplishments: In spring 1997, the Bureau was the first to identify the cause of the hepatitis A epidemic among Marshall area schoolchildren. The Bureau's identification prompted the nationwide recall of frozen strawberries, thereby reducing the risk of outbreaks nationwide. The strawberries were grown in Mexico, processed and frozen in a California plant, and distributed through the U.S. Department of Agriculture for school lunch programs and through distributors for commercial use.

In addition, in summer 1997, the Bureau implicated alfalfa sprouts as the cause of a multistate outbreak of *E. coli* O157:H7.

FINDING

1. Tuberculosis Billing Reimbursements

The Department of Community Health (DCH) did not retain documentation to ensure that proper rates were used for reimbursement of tuberculosis billings.

As specified by Section 333.5301 of the *Michigan Compiled Laws*, DCH reimburses hospitals and local health departments for services related to the care of certain

tuberculosis patients, namely "State-at-large" patients. "State-at-large" patients include veterans who were honorably discharged, individuals who have not acquired legal settlement in the State, and individuals committed to treatment by court order. *Michigan Administrative Code R 325.178* specifies that payments for hospital care shall be made at the Medicaid interim cost charge percentage rate for each hospital that was in effect at the time of admission.

DCH paid a total of \$29,186 for "State-at-large" inpatient treatment during fiscal years 1997-98 and 1996-97. We could not reconstruct the interim cost charge percentage rate for each hospital that was in effect at the time of admission. As a result, we could not determine if the amounts paid were appropriate.

RECOMMENDATION

We recommend that DCH retain documentation to ensure that proper rates were used for reimbursement of tuberculosis billings.

AGENCY PRELIMINARY RESPONSE

DCH agrees with the finding and recommendation. By October 1, 1999, the Tuberculosis Program will develop and implement a documentation form to accompany each tuberculosis billing. This form will chronicle DCH contacts with the Medicaid Rate Setting Section and the interim cost charge percentage rate that the Section provides to DCH.

FINDING

2. Employee Evaluations

The Bureau did not require periodic formal employee performance evaluations.

Periodic formal evaluations of employee performance, including criteria to assess employee strengths and weaknesses, would assist management in:

- a. Identifying possible employee weaknesses and the need for additional training.
- b. Documenting employee performance and promotional potential.

- c. Assigning work according to employee strengths.
- d. Building employee morale by recognizing good performance.

The Bureau required formal employee performance evaluations for part of the prior audit period. However, this requirement was discontinued in July 1990.

RECOMMENDATION

We recommend that the Bureau require periodic formal employee performance evaluations.

AGENCY PRELIMINARY RESPONSE

The Bureau agrees with the finding and recommendation. The Bureau informed us that it has already initiated a system of annual employee performance evaluations. At the time of the audit, 2 of the 3 Bureau divisions were conducting annual performance evaluations of all employees, including those in nonmanagerial posts. The Bureau informed us that it has subsequently undertaken, effective May 1999, a similar evaluation system in the Communicable Disease Epidemiology Division. The Bureau also informed us that an internal tracking system has been developed to ensure that all Bureau employee evaluations are completed regularly and timely.

EFFECTIVENESS IN PROVIDING HEALTH-RELATED INFORMATION

COMMENT

Audit Objective: To assess the Bureau's effectiveness in providing health-related information for developing interventions that will either protect or improve public health.

Conclusion: We concluded that the Bureau was generally effective in providing health-related information for developing interventions that will either protect or improve public health. However, we noted a reportable condition involving timely reporting.

Noteworthy Accomplishments: In 1998, Michigan was recognized by the Centers for Disease Control and Prevention as making significant progress in implementing the U.S.

Public Health Service guidelines as a result of the activities and research performed by the Bureau. The Public Health Service guidelines recommend providing human immunodeficiency virus (HIV) counseling and voluntary testing for all pregnant women and using an antiretroviral drug among infected women and their infants. A study performed by the Bureau indicated that an increased number of HIV-infected pregnant women were being treated with zidovudine prophylaxis. This treatment resulted in a decrease in the number of exposed children becoming HIV infected, thereby demonstrating the success of perinatal HIV prevention efforts.

FINDING

3. Timely Reporting

The Bureau did not publish Behavioral Risk Factor Survey* data in a timely manner.

The Behavioral Risk Factor Survey provides data used to monitor the prevalence of behaviors related to the leading causes of death, chronic disease, and disability. Timely publishing of epidemiological data is essential for developing interventions that will improve the public's health through surveillance and analytic services. The Survey containing 1995 epidemiological data was not published until February 1998. In addition, the Survey containing 1996 data had not been published as of January 1999.

Public health professionals and researchers rely on epidemiological data to plan and develop interventions. Working with three-year-old data does not allow an accurate assessment of the current health conditions for planning and developing interventions to improve the public's health.

RECOMMENDATION

We recommend that the Bureau publish Behavioral Risk Factor Survey data in a timely manner.

* See glossary at end of report for definition.

AGENCY PRELIMINARY RESPONSE

The Bureau agrees with the finding and recommendation. The Bureau informed us that it is reviewing its procedures to ensure that the Behavioral Risk Factor Survey data is reviewed and published within 10 months of its receipt from the contractor. The Bureau also informed us that the 1996 data has been published and distributed. The 1997 data is currently under departmental review and, although the 10-month goal was not achieved, the Bureau expects to release this data in the near future. The Bureau expects to hire a Behavioral Risk Factor Survey epidemiologist by September 1999 to perform data/publication formatting in-house so it will not have to be sent to the Michigan Public Health Institute, a step that has significantly delayed publication. Finally, the Bureau informed us that it was diligently working to expedite the departmental review process to ensure that the 1998 report is published within the established time line.

SUPPLEMENTAL INFORMATION

Description of Survey

We conducted two surveys. One was addressed to local health departments, and the second was addressed to physicians and medical laboratories.

We surveyed 48 local health departments to obtain feedback on the quality of services provided by the Bureau of Epidemiology. We obtained 25 responses, a response rate of 52%. The total number of responses for each item may not agree with this number because some respondents provided more than one response to an item and other respondents did not answer all items. Also, we did not include the questions and answers that required the respondent to write an explanation. We did, however, provide the narrative comments to the Bureau as it may benefit from their informational nature.

In addition, our survey of physicians and medical laboratories provided beneficial information for Bureau administrators. We did not include this survey in the report; however, we provided the survey results and comments to the Bureau.

BUREAU OF EPIDEMIOLOGY
Local Health Departments
Summary of Survey Responses

Which of the following statements most accurately describes your level of knowledge and interaction with the Bureau of Epidemiology?

- 11 Very familiar with and regular contact with the Bureau.
12 Somewhat familiar with and some contact with the Bureau (familiar with one or more specific services but not familiar with the overall operations of the Bureau)
2 Not familiar with and little or no contact with the Bureau.

Which one or more of the following best describes your relationship with the Bureau of Epidemiology?

- 20 We provide the Bureau with statistical data and information.
20 We receive data and information related to project sites and/or communicable diseases from the Bureau.
3 Other.

How many years has your agency been in contact with the divisions within the Bureau of Epidemiology?

- 1 0 - 1 years
2 2 - 3 years
4 4 - 5 years
23 More than 5 years

For which of the following reasons have you contacted the Bureau? (Please check all that apply.)

- 18 Technical assistance
17 Procedural guidance
19 Statistical information
12 Data collection
 Other

Please complete the following grid for each item checked in the preceding question. If the item was not checked, please check "Not Applicable. "

How satisfied are you with the assistance provided by the Bureau for each of the following?

	Very Satisfied	Somewhat Satisfied	No Opinion	Somewhat Unsatisfied	Unsatisfied	Not Applicable
a. Technical assistance	14	5				2
b. Procedural guidance	8	8	1			2
c. Statistical information	11	7				1
d. Data collection	8	3	1			2
e. Other	2					

What is the average length of time it takes the Bureau to respond to the following? (Please select the most appropriate response.)

	<u>24 to 48 hours</u>	<u>3 to 5 days</u>	<u>Over a week</u>
Communicable disease inquiries	<u>21</u>	_____	_____
Environmental contaminants	<u>10</u>	<u>1</u>	_____

Based on the preceding question, was the response time adequate for your needs?

Communicable disease inquiries:

9 Always 15 Almost Always _____ Occasionally _____ Almost Never _____ Never _____ Not Applicable

Environmental contaminants:

4 Always 8 Almost Always _____ Occasionally _____ Almost Never 1 Never 7 Not Applicable

How satisfied are you with the Bureau's overall quality of service for the multitude of services provided?

15 Very Satisfied 9 Somewhat Satisfied _____ No Opinion _____ Somewhat Dissatisfied _____ Unsatisfied

Have you experienced any specific problems with the Bureau's services?

Yes 5 No 18

Glossary of Acronyms and Terms

antiretroviral drug	A substance that stops or suppresses the activity of a retrovirus such as HIV. Azidothymidine (AZT) is an example of an antiretroviral drug.
AIDS	acquired immunodeficiency syndrome.
Behaviorial Risk Factor Survey	Provides data used to monitor the prevalence of behaviors related to the leading causes of death, chronic disease, and disability.
CDC	Centers for Disease Control and Prevention.
DCH	Department of Community Health.
<i>E. coli</i> O157:H7	A species of bacteria found in the large intestines of humans and other animals that sometimes produces disease.
effectiveness	Program success in achieving mission and goals.
efficiency	Achieving the most outputs and outcomes practical for the amount of resources applied or minimizing the amount of resources required to attain a certain level of outputs or outcomes.
epidemiology	A branch of medicine dealing with the incidence and prevalence of disease in large populations and with the detection of the source and cause of epidemics of infectious disease.
HIV	human immunodeficiency virus.

internal control structure	The management control environment, management information system, and control policies and procedures established by management to provide reasonable assurance that goals are met; that resources are used in compliance with laws and regulations; and that valid and reliable performance related information is obtained and reported.
mission	The agency's main purpose or the reason the agency was established.
performance audit	An economy and efficiency audit or a program audit that is designed to provide an independent assessment of the performance of a governmental entity, program, activity, or function to improve public accountability and to facilitate decision making by parties responsible for overseeing or initiating corrective action.
perinatal	Occurring during or pertaining to the phase surrounding the time of birth, from the twentieth week of gestation to the twenty-eighth day of newborn life.
prophylaxis	Treatment intended to defend or protect from disease.
reportable condition	A matter coming to the auditor's attention that, in his/her judgment, should be communicated because it represents either an opportunity for improvement or a significant deficiency in management's ability to operate a program in an effective and efficient manner.

retrovirus

Any of a family of single-stranded ribonucleic acid (RNA) viruses containing an enzyme that allows for a reversal of genetic transcription from RNA to deoxyribonucleic acid (DNA) rather than DNA to RNA. The newly transcribed viral DNA is incorporated into the host cell's DNA strand for the production of a new RNA retrovirus, such as AIDS or several viruses implicated in causing various forms of cancer.

zidovudine

An antiretroviral drug used in the treatment of HIV.